THE JOURNAL OF SCHOOL HEALTH

VOL. XII NO. 1

JANUARY
1 9 4 2

PUBLISHED BY
THE AMERICAN SCHOOL HEALTH ASSOCIATION

AMERICAN SCHOOL HEALTH ASSOCIATION

Organized 1927

Devoted to the interests and advancement of those engaged in school health activities and the services rendered by them

Officers of American School Health Association

President:

Earl E. Kleinschmidt, M.D., Director, Department of Preventive Medicine, Public Health and Bacteriology, University of Loyola, Chicago, Illinois

President-Elect:

Clair E. Turner, Dr. P.H., Massachusetts Institute of Technology, Cambridge, Mass.

Vice-Presidents:

V. K. Volk, M.D., Saginaw, Mich.
S. B. McPheeters, M.D., Goldsboro, N.C.

Executive Secretary and Treasurer:

A. O. DeWeese, M.D., Kent, Ohio

Editor:

Charles H. Keene, M.D., Buffalo, N. Y.

GOVERNING COUNCIL

Term Expires 1942

Walter H. Brown, M.D., Palo Alto, Calif.
Dorothy Deming, R.N., New York, N. Y.
Hortense Hilbert, R.N., Washington, D. C.
Arthur R. Turner, M.D., Chicago, Ill.
David VanderSlice, M.D., Ann Arbor, Mich.

Term Expires 1943

I. P. Barrett, M.D., Fort Worth, Texas
John E. Burke, M.D., Schenectady, N. Y.
Walter S. Cornell, M.D., Philadelphia, Penna.
N. P. Neilson, Ph.D., Washington, D. C.
Walter Wilkins, M.D., Raleigh, N. C.

Term Expires 1944

J. L. Bowman, M.D. Montgomery, Ala.
Helen Ahrens Cary, M.D., Portland, Ore.
Lon W. Morrey, D.D.S., Chicago, Ill.
C. Morley Sellery, M.D., Los Angeles, Calif.
Sue Hurst Thompson, M.D., West Branch, Mich.

Past Presidents, Ex-Officio

Harold H. Mitchell, M.D., New York, N. Y., 1942
Charles L. Outland, M.D., Richmond, Va., 1943
A. L. Beaghler, M.D., Denver, Colo., 1944

Affiliated Associations

Bernard W. Carey, M.D., Dr. P.H., Michigan Ass'n., Detroit, Mich.

THE JOURNAL OF SCHOOL HEALTH

Vol. XII **JANUARY, 1942** **No. 1**

CONTENTS

A Usable Dental Health Index for Schools 1
C. E. Turner, Sc.D., Dr. P. H., Percy R. Howe, D.D.S., Marita J. Dick, C.P.H.

The Astoria School Health Study—Educational Implications 9
Dorothy B. Nyswander, Ph.D.

The Astoria School Health Study—Medical Aspects 16
George M. Wheatley, M.D.

Health in the Educational Program—Some Basic Propositions 23
D. Oberteuffer, Ph.D.

Editorials 29

Abstracts 32

Reviews ..... 28 and 34

Meetings ..... Inside back cover

THE JOURNAL OF SCHOOL HEALTH

Published monthly, except July and August, at Buffalo, N. Y.

THE AMERICAN SCHOOL HEALTH ASSOCIATION

3335 Main St., Buffalo, New York

Editor
CHARLES H. KEENE, M. D.
University of Buffalo, Buffalo, N. Y.

Assistant Editor
EARL E. KLEINSCHMIDT, M. D.
Loyola University, Chicago, Ill.

SUBSCRIPTION RATES TO THE JOURNAL

Membership dues, $2.00, including $1.75 subscription. Subscription $1.75.
Single copies 25c

Address all communications to
THE EDITOR, 3335 Main Street, Buffalo, New York

Copyright, January, 1942, by
The American School Health Association

Entered as second-class matter at the Post-Office at Buffalo, N. Y.
October 5, 1937

YOU ARE HELPING TO BUILD A BETTER AMERICA!

Her future citizens are in your care

Healthy, happy, intelligent children are the best guarantee for a sound Democracy tomorrow.

How do 2,000,000 school children with hearing defects fit into this picture?*

The psychological suffering of these boys and girls—its harmful results on their adult lives—presents a condition which must concern every educator.

IF DETECTED IN TIME—impaired hearing in children often can be cured or greatly alleviated by proper medical care.

You can detect hearing defects in time with the 4C Audiometer...easily, scientifically, economically. Forty children can be tested in 20 minutes—*20 minutes that may change failure to success for one of your pupils.*

Distributed by GraybaR

* Based on survey of Bureau of Education, Department of Interior

Mail the coupon for full information

Western Electric
AUDIOMETER

GRAYBAR ELECTRIC CO. JSH-1-42
Graybar Building, New York, N. Y.
Gentlemen: Please send me details of the Western Electric 4C Audiometer.

NAME .....

ADDRESS .....

THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XII JANUARY, 1942 No. 1

A USABLE DENTAL HEALTH INDEX FOR SCHOOLS*

C. E. TURNER, SC.D., DR.P.H.

Professor of Biology and Public Health, Massachusetts Institute of Technology
Cambridge, Massachusetts

Percy R. Howe, D.D.S.

Forsyth Dental Infirmary For Children
Boston, Massachusetts

MARITA J. DICK, C.P.H.

Research Assistant in Health Education, Massachusetts Institute of Technology
Cambridge, Massachusetts

School programs in dental health are improving, but we are still handicapped by a lack of a usable and regular measurement of accomplishment. In public health work, indices of health status and objective measurements of achievement are vitally essential. Note, for example, the important contributions which have been made by public health surveys and public health appraisal forms. Whenever we can show to the public a specific health need or a significant accomplishment in terms of objective, understandable, and comparative figures, we gain support for further progress.

One simple and usable index of school dental work is the percentage of children in each classroom at each grade level and in the school system, who have had all necessary dental work completed at least once during the school year. Such figures show clearly the success achieved with respect to dental services. They show teachers, children, and parents where each child stands and they focus attention upon those children for whom the dental service problem remains unsolved. Experience shows that the amount of dental service secured by school children always increases when this index of accomplishment is used.

The number of children receiving dental correction is not, however, a measure of dental health. The school dental program would be tremendously stimulated if we could find some simple inexpen-

* Presented before the American School Health Association and the Oral Health Group at Atlantic City, October 15, 1941.

sive index which all schools could use every year at all age levels, and by which they could measure their progress and compare one school system with another. In the past twenty years, various dental indices have been suggested. These may be briefly enumerated as follows:

1. "Quantitative Caries—Index For Teeth," Morelli, G.[1]

   Morelli used carious and filled teeth as a basis of his index.

   His quantitative index equaled the

   $$\frac{\text{number of existing teeth e. g. 24 (existing teeth)}}{\text{number of carious teeth 6 (carious teeth)}} = 4$$

   This number was expressed as $\frac{4}{6}$

   This method will give a general impression of the state of dental health of large groups of persons. However, for examinations of the same person, a repeated examination compared with previous ones will give a false impression concerning the rate of increase of dental caries, since it does not take into account new cavities on different surfaces of the same teeth.

2. "Caries Index," Mellanby, M.[2], Day, C. D. M., and Sedgwick, H. J.[3]

   In this index, carious or filled cavities are used as units of calculation. The cavities are classified into four groups according to size.

   There are two disadvantages to this method:

   (a) It may give uncertain results when used by a number of dentists because it is difficult for dentists to classify cavities uniformly.

   (b) There is uncertainty in judging depth of cavities which already contain fillings, unless x-rays are used.

3. "The Modified Dental Caries Index," Bodecker, C. F.[4]

   In this index, the number of carious or filled surfaces,

1. Morelli, G., *Dental Cosmos*, 66:1068-1075, October 1924.

2. Mellanby, M.—Medical Research Council, Part III. Special Report Series, No. 191, London, 1934, p. 68.

3. Day, C. D. M., and Sedgwick, H. J., *Dental Cosmos*, 77:442-452, May, 1935.

4. Bodecker, C. F., Journal of the American Dental Association, 26:1453-1460, September, 1939.

or areas, are used as units of calculation. This gives more uniform results in the hands of different dentists, because it is based on anatomic areas of the teeth, allowing for exact classification of cavities or fillings by surface indications. The five tooth surfaces which are considered are (a) mesial, (b) distal, (c) buccal or labial, (d) lingual, and (e) occlusal or incisal.

To compute this index, the dentist counts the number of carious surfaces. Each surface counts one unit (exceptions: molars and pre molars count two units because of the enamel ridge between parts of the tooth; an entire crown counts three units; a tooth missing, i. e., extracted because of caries, counts three units). The total number of units is the score.

e. g. 28:1/0 = 27:1/0.

This is a good index for dentists; for schools it is impractical. It is time-consuming and costly. Dentists must make the examinations.

4. "Susceptibility Caries Index," Bodecker, C. F., McBeath, C. C., Zucker, T. F., [4], [5].

This index shows the number of teeth surfaces attacked by caries during a specified time. The specified time is 100 days.

e. g. 2 new caries for 182 days.

2 is divided by 182. This equals an increase per day of 0.0109 areas.

0.0109 x 100 equals 1.09 carious areas increase in 100 days.

This is the same as the "modified Caries Index" except that the score is set to a base of time, i. e. 100 days. This index is also impractical for the schools.

5. "Wisan Lost Permanent Tooth Index," Wisan, J. M.[6]

In this index there are two separate rates.

(a) Number of lost permanent teeth per 100 children. ("Lost" means those teeth extracted or requiring extraction.)

(b) Percentage of children with lost permanent teeth.

4. Bodecker, C. F., Journal of the American Dental Association, 26:1453-1460, September, 1939.

5. McBeath, E. C., and Zucker, T. F., Journal of Nutrition, 15:547-564, June, 1938.

6. Wisan, J. M., American Journal of Public Health, 28:859-862, July, 1938.

These rates are computed for children between the ages of 12-14 years.

An objection to this index is that a dentist's judgment as to whether a tooth "requires extraction" is very subjective. Also, the entire set of permanent teeth is examined, which is time-consuming.

Is this not a waste of time since 90-100% of all permanent teeth lost at these ages are first molars? Moreover, in using all the teeth, the index is subjected to continually changing conditions until the last of the second teeth are erupted.

6. "Tooth Mortality Rate," Knutson, J. W., and Klein, H., United States Public Health Service Studies.[7]

   This rate is the number of missing teeth (i. e. extracted teeth and those teeth with only roots remaining) per 100 children.

   Such an index differs from the Wisan Index in avoiding "teeth requiring extraction" which involve subjective judgment.

   For this index, considerable time must be consumed in dental examinations and computations because the index is based on the findings for the entire set of permanent teeth. It is suggested in the Hagerstown report on tooth mortality that a rate might be based on the findings in the first molars solely, or even just the lower right first molars.

7. "A. C. H. A. Indices."

   The original index of the American Child Health Association included scoring of the following items:[8]

   (a) Corrected and uncorrected caries in the first molars and the second bicuspids.

   (b) Amount of stain and tartar on the central and lateral incisors and on the first molars and second bicuspids.

   (c) The degree of inflammation of the gingival area adjacent to each tooth.

   From an experimental survey carried on by the Ameri-

7. Knutsen, J. W., and Klein, H., *Public Health Reports*, 53:1021-1032, June 24, 1938.

8. American Child Health Association, School Health Research Monograph No. III, p. 71, 1920.

can Child Health Association in which this index was used, it was concluded that the best measurement of past liability to caries was the number and extent of caries in the first molars. A revised index was then proposed, which included the following items:[9]

	Score
a. Amount of uncorrected caries in the first permanent molars	3
b. Amount of corrected caries in the first permanent molars	3
c. Proportion of caries corrected	6
d. Proportion of missing first molars (girls)	1
e. Proportion of missing first molars (boys)	1
f. Proportion of non-carious first molars	1

In setting up this new index, the original items concerning stain, tartar, and gingivitis were omitted because the original data indicated that:

(1) Stain is unrelated to tartar, gingivitis, or uncorrected caries.
(2) Tartar is related to gingivitis but not to caries.
(3) Gingivitis has a very slight tendency to increase with caries when the caries remain uncorrected.

The revised A. C. H. A. Index seems to be superior to the original index for several reasons.

(1) The new index involves less subjective judgment by omitting the scoring of gingivitis and the amount of strain and tartar.
(2) The new index measures directly the status of dental health and excludes measures of personal hygiene.
(3) The new idea is easier to administer.

The scoring of this index, however, is somewhat complicated. Each item is assigned a definite value ranging from 1-6 units, (items were weighted inversely as the variability of their occurrence), the values are added, and the final score is correlated with mathematical tables. Taking into account carious as well as lost first molars in computing the final score makes a time-consuming index which can only be used by dentists. Untrained persons using explorers might catch the explorers in areas between the

9. American Child Health Association, School Health Research Monograph, No. V, p. 23.

teeth, and record it as a small cavity, thus introducing errors into the scoring.

The American Child Health Association has also set up an index to be used by lay persons to detect cases with serious dental defect.[9] Two criteria of selections were used, cases complying with either criterion being selected.

(a) Cases having two or more first molars with one-third or more of the occlusal surface carious.

(b) Cases having one first molar with one-third or more of the occlusal surface carious and one or more first molars extracted. (The second criterion was used on the assumption that the first molars were extracted because of serious carious conditions.)

Such an index does not seem feasible for use in comparing dental health in different towns, since it considers only the most serious conditions, i. e. children with two or more first molars badly decayed or missing. Mouths with only one missing or carious first molar would be given a perfect score.

8. "Dental Health Capacity Index," Jensen, A. L.[10]

This index is a scoring of desirable and undersirable qualities in the dental mechanism. The items are classified in one of five classes, from "best" to "worst" for each of the following qualities:

A. Tooth structure losses
B. Soft tissue losses
C. Bone tissue losses
D. Functional losses
E. Morphology

The use of the x-ray is essential for this index. This renders it impractical for a school system. Also, the classification of the different tooth qualities by a dentist is far too highly subjective.

We have concerned ourselves with the feasibility of using the percentage of lost first permanent molars at various age levels as a simple index. So far as tooth mortality is concerned, the study of the U. S. Public Health Service[7] in the public schools of Hagerstown, Maryland, showed that 95% of teeth lost were first permanent molars. This report suggested that significant information

9. American Child Health Association, School Health Research Monograph, No. V, p. 23.

10. Jensen, A. L., Journal of the American Dental Association, p. 1033 ff, July, 1940.

7. Knutsen, J. W., and Klein, H., *Public Health Reports*, 53:1021-1032, June 24, 1938.

would be secured by a study of tooth mortality restricted to the first permanent molars only, or even to the lower right first molar. (In Hagerstown 70% of the total tooth mortality in boys and 80% of the total tooth mortality in girls was contributed by the lower first permanent molars.)

Obviously lost first permanent molars represent so large a part of tooth mortality as to suggest their usefulness where only an index and not a complete dental picture is desired. Examination for lost first permanent molars alone is simpler and less time-consuming than an examination for all lost permanent teeth. What is more important, the first permanent molars are in the mouth from the beginning of school life, and standards of tooth mortality can, therefore, be set for all age levels. On the other hand, the use of all lost permanent teeth as an index makes comparison at different age levels difficult because the number of permanent teeth in the jaws does not remain constant.

We cannot emphasize too strongly that such an index is quite unlike the results of a complete dental examination. It does not reveal the extent to which dental care is needed by the population, but if three-quarters of the school children have all necessary dental work completed each year, the lost first permanent molar index in different communities becomes fairly comparable. This index does not foretell the quality of all the second teeth because in some individuals the first permanent molars are definitely inferior in quality to the permanent teeth which erupt later. Nevertheless, most first permanent molars represent so high a fraction of the total permanent tooth mortality during school age as to be an overwhelmingly predominant factor in any index of permanent tooth mortality.

The condition or mortality of the first permanent molars is probably primarily a reflection of the health and nutrition of the child from birth through the pre-school period. In saying this, we also recognize that development during the prenatal period is also important because of its bearing upon the early life of the child. The point is that data concerning the mortality of the permanent molars reflect a childhood deviation from sound health and nutrition of which parents ought to be aware. It is characteristic of the second teeth unless there has been a sharp improvement in nutritional status after the first permanent molars have been formed within the jaw. Its interpretation to the public is less difficult than the interpretation of a total lost tooth index, and it has good potential value as a means of stimulating parents and other responsible

individuals in the better nutritional care of young children. Such an index would be increased in value by a periodic complete dental survey for a school system once in three to five years.

With these facts in mind, the following questions arise with respect to the feasibility of the lost permanent molar index. Is the number of lost first permanent molars at the different grade levels great enough to give reliable and comparable figures? Can the data be gathered with such speed and accuracy as to make an annual survey of this type a practical procedure? In case no dentist or dental hygienist is available, can a lay person be trained in a brief period of time to make a reliable observation of lost first permanent molars? In seeking the answer to these questions, we have given particular attention to the time required for training a lay person, the time required for gathering data, and the consistency of the data gathered by a lay person with that gathered by an experienced dentist. *(Continued next month)*

* * * * *

What One School Does For Good Health,—The entire program of the Community School is built around the principle that "Health must come first."

Our children have from 2 to 2½ hours a day out-of-doors. We have a play period before school, in the middle of the morning, for half an hour before lunch, and for 45 minutes after school.

Our children are served a hot lunch at school, the menus being checked by our school physician, Dr. Hugh McCulloch. Nine children and a teacher sit at a table. We don't talk about the right food —we serve it and eat it. The younger children have from 40 minutes to an hour of rest on cots after lunch. The older children have shop, art, music, or rest on cots if they need it.

Fruit is served at school after the afternoon play period, so that children will not stop at the corner drug store.

*We feel that posture consists of good nutrition, plenty of big muscle activity and joy in work**, so we don't do anything with posture exercises as such, but we do all we can to make good posture possible.

The follow-up of eye tests and physical examinations is very careful and thorough. The parent is contacted directly and reports back to the school what the child's own physician finds to be true. A record of all his information is kept on file. Children and teachers with colds are not allowed to be in school. Community School, St. Louis, Mo., Federal Security Agency, U. S. Office of Education, Circular No. 191, p. 13.

* Italics are editorial.

THE ASTORIA SCHOOL HEALTH STUDY—EDUCATIONAL IMPLICATIONS*

By DOROTHY B. NYSWANDER, PH.D., *Director*
District Health Education Demonstration, Department of Health, City of New York**

You are indeed kind to invite Dr. Wheatley and me here tonight to report the work which the Department of Health and the Board of Education have been carrying on in the school health field for the past four years. We are particularly happy that Dr. Emerson and Dr. Rogers are present—Dr. Emerson, because as a member of the advisory committee this study was one of his many activities, to which he gave freely of his energy even to the reading of the three volumes of the finished report; Dr. Rogers, because we have received from him as have countless other workers in the school health field, inspiration and confidence that the job we were doing was worth while, and here publicly we want to state our gratitude.

Dr. Wheatley and I have agreed on a division of labor in which I will present to you an overall account of some of our problems, the methods we used in trying to solve them, and a specific illustration of what administrative research means. He in turn will elaborate on the philosophy and methods underlying our procedures in the medical examinations.

The study we are reporting was requested by both the Departments of Health and Education. It was the natural outgrowth of the study of physical defects made in New York City by the American Child Health Association in 1930-1932; it came out of a wholehearted desire of the administrators concerned to see that the recommendations coming from earlier research studies were put into practice.

The two departments, the financial sponsors, and others with long continued interest in research in school health were represented on a committee which formulated guiding policies for the work. For example, from the very beginning the committee insisted that unique freedom be given to the experimental schools in Astoria, where the study was located. Thus the district superintendent of schools cut red tape so that we could try out new cumulative

* Presented before the American School Health Association, Atlantic City, N. J., Oct. 13, 1941.

** Formerly Director of the Astoria School Health Study, Department of Health, City of New York.

classroom records and methods of reporting observations with the 225 teachers in the schools; we could postpone events when advisable, eliminate certain types of record keeping; introduce doctor-teacher conferences for a trial period, and take away from teachers activities in the health service program they had been carrying and give them new ones.

The Depatment of Health matched the Department of Education in helping us achieve freedom of movement. Bureau directors, supervising nurses, and the health officer gave not only their blessing to innovations, but made it possible for nurses and doctors on the regular staff to work as part of the experimental group.

Thus, during the second year, the Study became an integral part of the city program. Health Department and school staff provided school health services for approximately 8,000 children in the experimental schools under the guidance of the Study staff. This plan of studying and making changes in a field laboratory was eminently practical. Evidence bearing on this is that during the four years practically every policy and procedure which stood up under testing in the Astoria district was adopted or adapated by the Departments of Education and Health for their city-wide programs.

Now what were the problems to be worked on? First, there were problems in administration. For example, we found that in reality two parallel health service programs were conducted for school children. One was carried on by the doctors, nurses, and dentists of the Department of Health, and the other by the teaching staff of the Board of Education. Originally these two programs were intended to supplement each other. During the course of years, however, they had become almost independent, and because of this we found staff in both departments failing to profit by the help which each could give the other through taking a definite responsibility and carrying that well. There was duplication by the doctors and nurses of work that the teacher could do far better than they, and teachers were making reports and doing follow-up work which would have been more effective if done by doctors and nurses.

Another problem arose from the lack of good tools. For example, although we found that 25 per cent of the nurse's time is spent on some one of fifteen types of activities associated with record keeping, the nurses did not use any office devices either to save time or to help in planning their work. Nor was there any provision for pooling the knowledge of doctors, nurses, and teachers about children. Analysis of the medical cards and class cards in

use at the time showed that both were woefully ineffective as instruments for giving any one a dynamic picture of the health status of any child.

A third concern was the methods used by the staff in doing their work. It was really this aspect of the school program that was of paramount interest to the two departments. The bureau directors felt that, in spite of much improvement, practices still had not been sufficiently geared to meet the recommendations coming from earlier studies. They no longer wanted to hear criticisms that school doctors and nurses were going about their work as they had for the past twenty years.

Other specific tasks were to develop different working programs for each of the major health conditions found in school children. A little study showed that the same methods used for finding children with vision defect and following them through to correction did not apply to discovering and securing attention for dental defects. However, each of these programs had to be flexible to meet the needs of the population groups—the rich and the poor; the literate and the illiterate; the home which assumes responsibility for the child and the one which does not. In other words, in developing procedures for vision, dental, cardiac, below-par, and hearing programs, we had to find ways of answering these two questions:

1. Are we translating our educational guidance into such simple terms that in spite of ignorance, language differences, or substandard incomes the family understands what the child's health problem is and how and where aid can be obtained?

2. Is full opportunity given to all parents to assume responsibility for obtaining needed care no matter what their ability to pay may be?

Two unrelated health programs being carried on side by side; lack of devices to simplify and coordinate the work of nurse, teacher and doctor; old fashioned practices in doing their jobs; and the need for flexible, highly specialized procedures for each of the major health conditions of the school child—these were the problems the Astoria group was asked to do something about. By the end of four years we had made considerable progress in clarifying each. That both problems and solutions are evidently not unique to New York City is shown by the fact that several rural counties in Oregon and an experimental area in Baltimore have already found that adaptations of the materials and procedures are bringing satisfactory results.

It is, of course, impossible to give much idea of what the outcomes of the study were. I thought rather that perhaps you might like to know something about the steps that were followed in what we are pleased to call administrative research.

In each area under investigation, the first step was to make a careful study of the program as it was being carried out. Many observations were made under different conditions. When possible statistical answers were sought to throw light on what the doctor, nurse, and teacher were each doing, and what was happening to the children as a result of their efforts. After the data were before us, the field staff and the Study staff set up plans to correct the deficiencies in the program and to strengthen the good points. Then several plans would be tried out, either in different schools or in succession in all of the experimental schools. Weekly conferences between Study staff and field staff were used to report how the special program was going. Needed changes were immediately made following a conference. While a new program was being developed, the staff from central office were brought in to advise us as to whether what we were doing was practical for the city as a whole. Later when the plan was accepted by the bureau directors, the staff in the experimental schools undertook to teach the procedures to key people from all over the city.

The steps taken to develop the vision procedures now followed throughout the city are a good example of administrative research methods. In line with the principle of first studying the operating program, study of vision testing was made to learn who was responsible for first detecting a visual defect in a child. Was the condition first found in the physical examination by the doctor, was it picked up by the nurse in any of her many activities, or was it first recorded by the teacher in her semi-annual administration of the Snellen test? At the same time, we wanted to know how long it took to get glasses for a child after the defect had been discovered. Seventy-nine children from six grades in one school had obtained glasses. For 62 of the 79 the teacher had first found the defect. The average time interval between detection and correction of defect increased from 10 months for children in the second grade to 29 months for those in the eighth grade.

Further study showed that only half of the medical cards for these 79 children contained any data on vision. For only 21 of the 79 cases were there notations showing that the nurse assisted in the follow-up work. Moreover in no single instance on either the

medical or the class card were there statements as to the conditions under which the glasses should be worn, when the child should have his glasses rechecked, or whether the glasses obtained were giving the child a maximum correction. The lack of integration of service, the inadequacy of the records, and the excessive period required to secure glasses were immediately recognized by principals, doctors, and nurses when these data were placed before them. Group conferences on the subject led to recommendations which were carried out. The recommendations were: (1) teachers' testing procedures must be coordinated with follow-up work of nurses; (2) the teaching staff must be relieved of some of the responsibility of follow-up work; (3) new emphasis must be introduced into the nurse-teacher conference to stress the importance of teaching children how to care for their glasses and the necessity of having them rechecked, and (4) data essential to supervising the after care of children wearing glasses must be obtained from the opthalmologists, recorded on the medical cards, and made available to teachers.

Next we wanted to find out how accurately the Snellen test was being administered by the teachers.

A total of 7459 children from all elementary grades were tested by their respective teachers in the classroom. Of these 1159 were reported to test 20/40 or worse. A technician from the staff retested 775 of the number reported by the teachers. Ninety-one per cent of the children found by teachers to test 20/50 or worse were found on retest to test 20/40 or worse, which is our present criterion for referring children for special eye care. On the other hand only 66 per cent of the children found by the teacher to test 20/40 were found to have a score of that seriousness.

After this study, we decided to refer children directly to the opthalmologist without rechecking by the nurse if the teacher found them to test 20/50 or worse. This change made a substantial saving in nursing time. The names of children testing 20/40 were to be sent the nurse on a separate listing. She was to retest these children before any contacts with the home were made.

We next studied the test scores of all children wearing glasses, and interviewed 174 children to find out how much they knew about eye care.

Then children for whom the teachers and technician had noted symptoms of eyestrain or visual difficulty were interviewed and studied. Figures were obtained to show what percentage of children

referred for symptoms alone we might expect to have returned by the opthalmologist as no case.

Next we analyzed 554 records of children whose parents had been notified of a vision condition in the usual manner to learn how many children had obtained eye care in a three-month period. Only 40 per cent had obtained eye care. This did not speak well for the method of follow-up then in use. New methods were devised.

Next the test scores of 916 kindergarten and first grade children were given considerable study. Many very serious problems were raised regarding the policies to be followed in testing these young children. We had found that teachers were not trained to give the test, nurses did not have the extra time it took to administer it, and that the unreliabilities of the testing technique for this age group were much greater than for older children. Nevertheless the responsibility for being attentive to the vision problems of this age group cannot be rejected, and further research investigations are recommended.

Next we studied the changes which teachers made in reporting vision scores at the beginning and end of a seven-months' interval. We found that teachers had improved in their vision testing during this period. We also found, however, that the 20/40 testing region is one in which nurses must watch their own testing capacity. Although nurses had not verified several children with 20/40 scores found by the teacher at the beginning of the time interval, at the end of seven months these children were considered to have definite visual defect. These findings put us on our guard not to neglect following up the cases referred each term by the teacher, even though they were not always confirmed.

Ways of working together came out of these studies which described policies and fixed responsibility for each detail of the vision program, and this program was put into effect. Statistics kept over a two-year period showed that the nurses' load of vision cases, which was excessive, due to confusion in the follow-up procedures, was reduced to one-third of its original size. Final validation, however, was reserved for a study made during the fourth year by the chief of the eye clinics of the Health Department.

The opthalmologist retested 1016 children from these grades. It was found that in 96 per cent of the cases there was agreement with teachers' scores. In 4 per cent there was not, but in two-thirds of these cases the teacher erred on the safe side in that she referred them as having a defect when there was none. There

were just 12 cases of the 1016 who were not known to the teachers and nurses as having defective vision. The program had been effective to the degree that 16.3 per cent of the 1016 children owned and were wearing glasses; 2.1 per cent were known and being followed up by both teachers and nurses and only 1.1 per cent were missed cases.

I hope this brief account of the types of vision studies we made give a little insight into the kinds of bases we built up on which to base our policies and methods. Similar studies were made of the dental, hearing, cardiac, and below par programs.

One of the greatest satisfactions of the Study staff and of the department staff in the demonstration area was when finally an in-service training course was established in the district for school health staff from other areas of the city. It was good to know that in the hands of competent supervising nurses, health officers, and medical supervisors the results of the work would be extended over the city. It is this complete chain of events—first getting acquainted with problems, then replanning and reconstructing, then installing locally, then training others, and finally installing over the city at large—that is the satisfying outcome of this work which we commend to your attention.

* * * * *

Pneumonia,—Considering only the primary pneumonias, the fatal cases are now concentrated in young children and in comparatively old people. About one-eighth of the total were less than 5 years of age, only 17 per cent were between 5 and 45, and the remaining 70 per cent were 45 or older. Those 65 years of age or more constituted 37 per cent of the deaths. High death rates in infancy and in middle and old age have always characterized pneumonia mortality, but this characteristic is now more striking than ever, particularly in old age where the prognosis of pneumonia is least favorable under any method of treatment.

Delay in calling the doctor was frequent in these fatal cases. In only about one-tenth of the cases was the doctor called on the first day of illness. In more than 40 per cent, a doctor had not been called until the fourth day or later, and in 12 per cent not until the eighth day or later. Delay was more common among colored patients than among the white, particularly among those suffering from lobar pneumonia. Statistical Bulletin of the Metropolitan Life Insurance Company, Vol. 22, Oct., 1941, No. 10, p. 2.

THE ASTORIA SCHOOL HEALTH STUDY
MEDICAL ASPECTS**

By GEORGE M. WHEATLEY, M.D., *Assistant Director**

Once upon a time a pediatrician, fresh from ward and clinic experience in the medical world, and woefully ignorant of the mysteries of a medical service within the walls of a school building, was asked to join hands with others to examine the vitals of such a service and help make it better. His first look at the school medical service in operation was something like this:

In a small room three mothers sit patiently trying to ignore the rompings of their restless children. In a second room a swarm of older children cluster around a desk where a nurse sits busy poring over notes from parents, private physicians, and clinics. The notes explain why the children have been absent. The nurse spends thirty minutes writing notes to teachers to permit these children to return to class. Meanwhile, the three mothers wait. The active children become more restless. The school physician waits, too. Now the nurse is ready. She selects the first child she can catch. He cries and struggles, but the physician, ignoring the tears, starts removing the child's clothing. Eventually the victim is stripped to the waist. Immediately a throat stick quickly pries open resisting jaws. With one practiced motion the doctor gets a hasty look, and the used throat stick thuds into the convenient basket. Off come shoes and stockings for inspection of the feet. Next, amid flourishing gestures, the chest is soundly thumped fore and aft and there is much business of coughing and breathing as the lungs are auscultated. A long and deadly silence follows, while the physician places the stethoscope over the region of the child's heart. The mother looks on when the physician places the child on the couch and more business of listening to the heart. The doctor is absorbed in his task and moves with machinelike precision. He works quickly, and, not counting the delay for the removal of clothes, the examination is over in three minutes flat.

He quickly scribbles "tonsils" on a piece of paper. "Take this to your doctor," he says to the mother. "Your boy has bad tonsils."

"Why," she exclaims with some surprise, "my Davie has never been sick."

** Presented before The American School Health Association, Atlantic City, N. J., October 13, 1941.

* Now Assistant Medical Director, Metropolitan Life Insurance Company.

"Well," the school physician says, "take this slip and give us a report from your doctor. If you have any questions, the nurse will talk to you."

He turns his back and commences on the next child. Midway through the morning his daily quota of 10 new admission examinations are completed.

Now the nurse, who has been busy apart from the psysician, with her records and sick children, herds into the medical room a large assortment of pupils. "These are follow-ups, Doctor, from the fifth grade." She lines them up—each with his Medical Card in his hand. One child's record states "functional" heart murmur; another says "nutritional deficiency"; the records of three show tonsil defects; the remaining children have dental defects. Because he sees no dental decay in the mouths of three children, the physician releases them from follow-up. After listening to the heart, he decides that the child with the "functional" heart is unimproved because the murmur is still heard in spite of a note on the record from a clinic stating "no heart disease." The child with nutritional deficiency has gained five pounds in the past year; however, he is unimproved because he is still eight per cent below average height-weight for age. All of the tonsil cases are noted as "corrected" because the tonsils have been removed.

At 11:45 the physician begins to tally up his morning's work for his statistical report. He has worked industriously and efficiently. He has seen more than 25 children; he has found the usual number of physical defects, and is able to report a fair percentage of corrections.

This first exposure of the pediatrician was followed by several months of observing, discussing, and working with school physicians, nurses, and teachers. For the pediatrician, as for others on the staff, this was education in school health work. Out of this intimate contact with the job itself, certain questions soon shaped.

(1) Which children could best profit from the physician's limited service?

(2) What methods for selecting children for medical examination should be tried?

(3) Would medical examinations of varying scope and intensity be more appropriate than a routinized type for all?

These questions began a period of experimentation. The pediatrician became a school doctor. He learned what the school physician does and feels. He felt irritation that comes with interrup-

tions in the routine of work; satisfaction in recognition of health conditions which respond to treatment; self-importance which principal and teachers, through their requests for medical advice, develop in him. He saw time consumed when he attempts to discuss health matters with mothers. He saw, too, increased understanding which results when such explanations are given.

The procedure of examination was tinkered with. Vision testing by the physician was eliminated. Routine auscultation of the lungs was omitted. Examination of the throat was placed as the last step in the medical examination. Leading questions to secure the most satisfactory health history were developed. Records and forms were written and rewritten and their effectiveness measured. School nurse and school physician were trained to work together as a team in the medical examination.

For three years, these and many other aspects of the medical work were dissected and examined. It was slow work, because always there were two questions applied to every procedure: (1) Is it practical? and (2) Do school physicians, nurses, and teachers understand it?

Thus staff education went hand in hand with experimentation. As in any struggle, it is not good strategy to extend forces into new sectors until the newly won position is consolidated by mopping up doubts and misunderstanding concerning the present field of action.

Slowly the picture changed. Procedures which stood the test of the experimental conditions were extended health district by health district until they were in effect throughout the city. These changes are seemingly for the better. The best criteria for this have been (1) the request, yes and sometimes demand, by the Health Department staff for extension of the new policies and procedures to their own health districts, and (2) the satisfaction expressed by physicians, nurses, and teachers in carrying out the new program.

When four years' study of school medical practice are telescoped into 15 minutes, certain ridges of emphasis emerge. They appear as expressions of policy for school medical service.

(1) *Focus the medical service on the children most in need.* In our experience more children with health problems were found by the physician among children selected through conference between teacher and nurse than by routine medical examinations of an equal number of children in a complete grade. This role of the teacher places her in the comparable position of a mother in the

home. The teacher is expected to use her knowledge of children and her powers of observation to select pupils who may have a health program. Such children are referred to the nurse, either directly or at the time of a periodic conference which the nurse holds with the teacher once and sometimes twice a year. A study made of children selected by the teacher-nurse plan shows that the medical examination finds eight out of every ten of these selected children have a health problem.

The purist may argue that this is not a precise screening method. True, it depends on non-medical judgment for initial selection. But so does the procurement of all family medical service. Present-day physicians educate their patients, pediatricians educate the parent to recognize those signs which are early indications of the need for medical attention. This is precisely the basic principle governing teacher-nurse selection of children.

(2) *Have the parent present at the medical examination.* The child is more than halfway on the pathway to correction if the parent attends the school medical examination. We find it no trick at all to get 85 and 95 per cent parent attendance. Pains are taken to make appointments; to stagger these appointments; to welcome the parent; to provide a comfortable chair; and above all to appear glad that she has come. The mother is encouraged to ask questions, and the effort is made to explain what is being done in the medical examination. If a health condition is found which calls for medical attention, a plan of action is made on the spot. Physicians and nurses are drilled in three questions: What can the parent do about it? Where can the condition be taken care of? And when can it be done? The replies are placed on the child's medical record to guide the nurse in the future.

(3) *Allow sufficient time for the medical examination.* It is true that the school medical examination must be limited. In fact, parts of it must be abbreviated, but there is no excuse for a total extirpation. Within the limits of our examining facilities, we expect the school medical examination to be one to be proud of and one to create respect and a future desire for medical service in the minds of both parents and children. As a result of taking time for a more careful examination which includes a medical history of the child, the school physicians, paradoxically, are finding fewer defects. The point is, the phoney defects of the past are now being weeded out.

Within the last few years there has been a slowly but surely

rising tide of respect for the recommendations of the school medical service. When a survey of opinion of private physicians who treated school children was secured shortly before the Astoria Study ended, it was generally admitted by the private physicians that the school was not needlessly referring children, especially those whose nutrition was below par or who had heart disease or diseased tonsils. In fact, the attitude of the clinic and private physician towards the recommendations of the school medical service may be a good barometer of the validity of the conditions recommended for medical attention.

(4) *Know the background of the child.* There is often much information about the child which the teacher can give the physician. The pupil Health Card is the instrument now employed to secure information on the child's health behavior in school. The history which is secured from the parent when she is present at the examination, or through a suitable form sent home, gives the school physician considerable help in appraising the child. After this new policy of securing medical history had been in operation several years, it was suggested at a meeting of the health officers and school physicians of the Health Department that the parent interview and history be eliminated on the grounds that it is time-consuming. This was greeted with a loud and violent protest. Not until then had we fully realized the increased satisfaction with which the school physician now views his work. It is now on a higher professional level. The school medical examination is now more nearly comparable to the kind of examination he has been trained to do as a physician.

(5) *Have the nurse present at the time of the medical examination.* For most effective coordination of physician and nurse effort the nurse must participate in the examination. The most effective way, we have found, is for the nurse, at the time of the examination, to sit beside the physician and write up her record. The medical record is her record. Sitting at the physician's elbow, she can make her notes. If all is not clear she may ask, "Doctor, do you want me to make a home visit on this case? Should I visit immediately? I still have several cases to visit that you recommended only last week." "What do you want to know when I visit the home, doctor?" "What shall I say about the need for treatment?"

(6) *Inform the teacher of the results of the medical examination.* Through the new policy of selection of pupils for medical attention the teacher is responsible for bringing many pupils to the

attention of the school physician. Naturally, she wants to know what the physician thinks about the child. This participation by the teacher in the school medical service plays an important part in improvement of medical service in the school. Now, the physician feels on his mettle because he is acting as a consultant. He is more directly responsible for pupil health in the entire school than he ever was before. Teachers want to know what the doctor thinks and, interestingly enough and to the surprise of the school physician, he is now beginning to ask what the teacher thinks.

(7) *Conserve professional time.* We have made every effort to relieve the doctor of activities which someone less experienced can do. For example, the physician no longer participates in vision testing. We do not delay him in his medical examination by expecting him to take the clothes off the child. He has been relieved of much of his record work.

(8) *Adapt the medical examination to the child.* This policy is well-illustrated by the following statement from the New York City Health Department School Medical Procedures for 1940. The physician is asked to make one of the following four decisions for each child presented to him for an opinion.

1. Child presents a health problem. It is advisable for the physician to interview the parent and to give the child a more thorough examination in the school;
2. The nature of the child's complaint is so apparent that further examination is unnecessary, but a nurse interview with parent is recommended to explain the nature of the condition and to plan for care; e. g., an orthopedic condition, a skin condition, or a discharging ear.
3. The child's symptoms or behavior should receive further observation by the teacher, nurse, or physician (to be designated by the physician and recorded on the Medical Record and Pupil Health Card);
4. No case (some explanation, if possible, should be made to the teacher or nurse concerning the child).

In short, this is a departure from a stereotyped examination. It allows the play of the physician's professional judgment. It appears to be a practical way of providing service for the individual child. To do otherwise, the examination becomes an end rather than the means of health care.

(9) *Keep a record of the essentials of the examination.* The record must be clear; what, if anything, is wrong with the child; and

what is recommended. A new record which provides space for individual comments and description has been introduced. We believe such a record is more useful than one with a series of check marks and codes which cannot be deciphered.

(10) *Encourage private physician participation in the school medical program.* Early in the experimental period of the Study efforts were made to promote private physician examinations for school children. There are many obvious advantages to this policy. It encourages families to use their own physician in preventive medicine; if health problems are present it places the child that much nearer treatment; it shares the load of medical examinations which the school cannot do properly alone; it arouses interest of the private physician in the school health program. Since increased emphasis on private physician examinations has been actively promoted as a city-wide policy, the per cent of entering pupils examined by their own physicians has increased in the past four years from less than 10 per cent to more than 25 per cent. In view of the economic status of many of the pupils in the public schools of New York City, this is a substantial achievement.

These comments are the residue after evaporating the more volatile content of the Study. It is a summation of the medical aspects of the Astoria Health Study. School health service needs a floor in quality, below which it must not go. To meet the letter of the law, the Service has been spread thinner and thinner until now its defects are easily visible. Quality must come first, quantity afterward. Only in this way can school health service meet its primary obligation of an education function in the school. Health service in the school must demonstrate good medical care to parent and child. This appears to be a sound and substantial approach for the future. Anything less is bad education.

After four years much remains to be explored. While developing ways to meet old problems, this experience, as in most intensive studies, has created new ones. Thus the goal of perfection still lies beyond. But we who have been associated with the Astoria Study feel a satisfaction that, with the help of the school physicians and nurses of the Health Department, and members of the Department of Education, we have inched some short way along the pathway to better service. We hope the success of this experience will encourage others to rise up to do something more for the school health program.

* * * * *

HEALTH IN THE EDUCATIONAL PROGRAM*

SOME BASIC PROPOSITIONS

D. OBERTEUFFER, PH.D.
The Ohio State University

Ninety odd years have elapsed since the first efforts to bring a health interest into schooling were made. Figuratively, Education invited Medicine to join with it to carry off better the educational responsibility which our communities had placed upon our free public school system. For most assuredly the school was given a responsibility, it was commissioned to do a job, and that was to prepare citizens for life in a democratic state, and to insure the kind of total development of the individual student which would allow him to function harmoniously within that culture. The school was and is supposed to teach, to facilitate learning, and so far our communities have not altered the original charter materially.

It was believed, a half a century ago, that Medicine could help in this. Medicine had its own job to do, its own sphere of influence and its own program. Figuratively speaking again, the school acknowledged this, but still asked Medicine to help out on the process of educating in schools, and nothing has arisen in ninety years to make us believe that the original invitation should not still hold. Medicine and Education can and must pool their knowledge, techniques, experience, and humanitarian hearts to the end that a school child, sons and daughters of our own or our neighbors, might grow in wisdom and stature.

But the two great professions have not always had smooth sailing in their joint enterprise. There have been misunderstandings, cross purposes, rivalries, and arguments crop up from time to time here and there over the country to mar the orderly development of the school health education program. The past is marked with notable episodes in which the two professions have barked and scratched as each tried to have its own way in contributing to the health of the child in school. These flare-ups are embarrassing and sometimes bitter, but it is not too optimistic to say that they have, nevertheless, contributed to our mutual growth and have been the means of clarifying positions so that we can now continue, as we have been in the last two decades, to evolve jointly accepted policies,

* Presented to the Michigan School Health Association at Grand Rapids, Mich., Nov. 14, 1941.

what is recommended. A new record which provides space for individual comments and description has been introduced. We believe such a record is more useful than one with a series of check marks and codes which cannot be deciphered.

(10) *Encourage private physician participation in the school medical program.* Early in the experimental period of the Study efforts were made to promote private physician examinations for school children. There are many obvious advantages to this policy. It encourages families to use their own physician in preventive medicine; if health problems are present it places the child that much nearer treatment; it shares the load of medical examinations which the school cannot do properly alone; it arouses interest of the private physician in the school health program. Since increased emphasis on private physician examinations has been actively promoted as a city-wide policy, the per cent of entering pupils examined by their own physicians has increased in the past four years from less than 10 per cent to more than 25 per cent. In view of the economic status of many of the pupils in the public schools of New York City, this is a substantial achievement.

These comments are the residue after evaporating the more volatile content of the Study. It is a summation of the medical aspects of the Astoria Health Study. School health service needs a floor in quality, below which it must not go. To meet the letter of the law, the Service has been spread thinner and thinner until now its defects are easily visible. Quality must come first, quantity afterward. Only in this way can school health service meet its primary obligation of an education function in the school. Health service in the school must demonstrate good medical care to parent and child. This appears to be a sound and substantial approach for the future. Anything less is bad education.

After four years much remains to be explored. While developing ways to meet old problems, this experience, as in most intensive studies, has created new ones. Thus the goal of perfection still lies beyond. But we who have been associated with the Astoria Study feel a satisfaction that, with the help of the school physicians and nurses of the Health Department, and members of the Department of Education, we have inched some short way along the pathway to better service. We hope the success of this experience will encourage others to rise up to do something more for the school health program.

* * * * *

HEALTH IN THE EDUCATIONAL PROGRAM*

SOME BASIC PROPOSITIONS

D. OBERTEUFFER, PH.D.
The Ohio State University

Ninety odd years have elapsed since the first efforts to bring a health interest into schooling were made. Figuratively, Education invited Medicine to join with it to carry off better the educational responsibility which our communities had placed upon our free public school system. For most assuredly the school was given a responsibility, it was commissioned to do a job, and that was to prepare citizens for life in a democratic state, and to insure the kind of total development of the individual student which would allow him to function harmoniously within that culture. The school was and is supposed to teach, to facilitate learning, and so far our communities have not altered the original charter materially.

It was believed, a half a century ago, that Medicine could help in this. Medicine had its own job to do, its own sphere of influence and its own program. Figuratively speaking again, the school acknowledged this, but still asked Medicine to help out on the process of educating in schools, and nothing has arisen in ninety years to make us believe that the original invitation should not still hold. Medicine and Education can and must pool their knowledge, techniques, experience, and humanitarian hearts to the end that a school child, sons and daughters of our own or our neighbors, might grow in wisdom and stature.

But the two great professions have not always had smooth sailing in their joint enterprise. There have been misunderstandings, cross purposes, rivalries, and arguments crop up from time to time here and there over the country to mar the orderly development of the school health education program. The past is marked with notable episodes in which the two professions have barked and scratched as each tried to have its own way in contributing to the health of the child in school. These flare-ups are embarrassing and sometimes bitter, but it is not too optimistic to say that they have, nevertheless, contributed to our mutual growth and have been the means of clarifying positions so that we can now continue, as we have been in the last two decades, to evolve jointly accepted policies,

* Presented to the Michigan School Health Association at Grand Rapids, Mich., Nov. 14, 1941.

mutually satisfactory programs, and well integrated school programs. Is it too far beyond us to believe that the professional workman, whether he be in medicine, public health, or education is slowly coming to hold a mutual respect for the other fellow and to show increasingly a willingness to sit around the table and thrash things out?

For it is becoming ever so clear that no one group knows all the answers to the school health program. The medical doctor may think he does but he misses the mark a country mile when he tries to write a textbook or fails to see the need for his cooperation in a personnel counseling program. The school man appears ridiculous when he tries to teach hygiene or health with the pitifully inadequate preparation of most teachers in the life sciences; and the public health officer becomes derelict in the eyes of the others when he lazily or hastily scribbles a few notes on a card and calls it a physical examination. It is easy to look ridiculous in the other fellow's eyes.

But we are in an era now when we know that no one has a corner on all the answers and that the only way we can get the solutions to our problems, and the only way we can make progress in school health education, is to listen with as much understanding as we can muster to the other man's point of view, then try to work out policy and program on the basis of what is best for all concerned.

For you see we have no standard practice. We have no Federal control over school health education. There is no dictator laying down the law. The American Medical Association, the American Public Health Association, and the National Education Association are the important national but non-official, non-Federal policy forming bodies. No one of the three nor all three combined could succeed in being dictatorial. They can be only helpful to local and state groups as they grapple with the details of the school health program and as outstanding examples of such helpfulness one needs only to cite the painstakingly solid, important and almost brilliant work of the Joint Committee on Health Problems of the American Medical Association and the National Education Association; and of the tremendous popularity of the annual Health Education Institute of the American Public Health Association. Progress is being made, we are agreeing on both policy and program. There are still a few public health officers and physicians who sulk and won't play unless they can be Boss, and there are still some edu-

cators who think a chiropractor can make a good school doctor, or who believe the school is the place to train the mind alone and ignore the organic basis for development. But this sort is rapidly becoming the minority. The rest of us are growing in mutual respect and understanding.

To test out this thesis, to see in a small way how far we have come in our thinking may we propose a few statements which seem clear to us now in 1941? Can we agree that each of these is sound? If we can, we are in a splendid position to do effective work in school education.

(1) The task of the school, to date, is to inform, to develop capacities and skills for living now within the boundaries of the democratic culture. The school cannot overlook its social obligations, it cannot merely try to pack away knowledge against a future need. The school must become one and the same with the current social, scientific, and industrial problems of the community. The school has no business preparing for "life outside." The school must be life itself and approach its program in health as realistically as health itself is real.

(2) So far society has not given the school the privilege of interpreting this in too broad detail. The school is *not* in the business of the practice of medicine nor is it a public health agency. It cannot undertake to sponsor or finance curative or remedial programs of a medical or dental nature, but can only serve as an interested community agency to stimulate other agencies or individuals to do a needed job for the benefit of a handicapped or ailing student.

(3) It can and must collect data on the health of its children and use those data in the development of its educational program; beyond that it should turn over its data to others whose rightful spheres include therapeutic care and treatment. For example, the school must have the privilege of developing a physical examination program because the data collected on the health of children are used (a) as a basis for modifying the academic program to meet individual needs; (b) as a basis for classification in physical education; (c) as a determinant of fitness for athletic participation; (d) as a source of problems for a health instruction program; (e) and as a source of information which can lead physicians to render children fit to receive an education. If the school must employ physicians to obtain this information then it should have that privilege.

(4) The school health service, therefore, is not merely a pro-

gram to discover handicaps so that they can be corrected by the family physician. Its program goes beyond the simple physician-patient relationship and requires for its success that professional persons, other than physicians, be admitted to the use of some of the data found on the examination. If this calls for a more liberal interpretation of the principle of privileged communication then we must have that concession.

(5) The school personnel in possession of this sort of information must use it judiciously, with all the care and professional regard with which it is used by the physician or public health officer. The data must neither be filed away where no one can see or use it, nor can it be bandied about without discrimination.

(6) The school personnel must adhere strictly to the principles, standards, and laws governing the practice of medicine. Non-medically trained personnel, i. e., teachers, must never diagnose, must never by intimation or guess arrive at conclusions concerning the causative factors of disease or handicaps. This function is strictly within the province of medicine or dentistry.

(7) The program of the school in all of its aspects must be integrated to the end that the health of the school child is protected and developed to his best advantage. The curriculum, the personnel, the physical environment, the schedule, everything about a school must be analyzed for its contribution, and where deviations from good scientific practice occur they must be corrected through the responsible educational authorities.

(8) The personnel of the school, teachers, administrators, architects, custodians, all must be prepared to function in an integrated program. They must be prepared in their colleges or elsewhere to recognize and to act upon their responsibilities for the health of the school child. Teachers poorly equipped in skill to understand and solve health problems or badly adjusted personally within their own lives are a hazard and an obstruction to the attainment of a completely integrated health program.

(9) And yet the school cannot make a fetish of health. The health interest can be badly overdone. We are in danger of becoming a nation of hypochondriacs. Somehow health information and health practices must be received and done for their contribution to effective living. Health can be taught neither as an end nor as a motive, but as a tool, an instrument highly useful in attaining other and more objective purposes.

(10) Children's needs, both of the "felt" variety and those

which truly exist, but of which children are unaware, are the most potentially useful substance out of which to build a program of school health instruction. Adult guesswork as to these needs is unreliable. Children's needs can be discovered and must be used in a curricular sense as the basis for instruction in healthful living. Hygiene must never again be the study of anatomy, physiology, or bacteriology for their own sake, or as a "background" for the later solution of health programs. The problem must be the take-off point, and the descriptive materials from the sciences must be used *in explanation of the problem.* In that way only does the student come best into an understanding of his health in relation to his life.

(11) Analytical and investigative research thus must precede any program of instruction and service. Facts must be found. Problems must be proved. Trends must be established. Student life must be studied. Because a thing was taught in the past, or because we got it in medical school or some previous hygiene course are no safe criteria for present practice. Analyses must be made of student curiosities as revealed by their written or spoken word. We must discover and use student problems as revealed by their physical examination records, problems as they may be revealed by parents, teachers, deans, and others who know and can reveal problems of students, student problems of living as created by newspapers, the radio and motion pictures, problems from their daily environment, from literature they read, and from any other source which will yield facts and not guesses concerning the informational needs of students.

(12) The program of physical education in school is an educative and not a body-building program alone. There are essential differences between physical training and physical education. The only thing they have in common is a contribution, and a valuable one, to the development of organic power. But modern physical education is not only a modest health building influence, but it seeks ends in social development, in the maturity of personality, in fun, joy, and happiness in the pleasurable use of leisure, and certainly in the contribution which experience, both directed and creative, in play can make to the perpetuation of those relationships between individuals needed to ensure the life of our democratic culture. Physical training is unaware of these ends and seeks merely a sound body through exercise which can be used for any purpose no matter what.

The foregoing twelve propositions could be supplemented by a

dozen more. Do we believe in them? Will we accept them? Probably most of us would. They are submitted as examples of the sort of basis upon which rich and well-rounded school health programs can be built. There are so many people involved, so many diverse professional preparations and experiences and varying personalities that it seems only reasonable to begin work with a statement of premise. From that point forward, providing these premises are broad enough and are sound, the many practical problems involved can be solved with greater ease by reference to the basic principle.

* * * * *

"IN DEFENSE OF CHILDREN"

By BERT I. BEVERLY, M.D.

(*Published by John Day Co., New York,* 1941 *pp.* 233, *Price* $2.00)

We all appreciate that embarrassing behavior of a child may be understood to be a normal reaction. Such understanding of a child's reactions helps us to manage the child's environment in a manner to avoid future trouble, or enables us to help the child to understand "what he is doing, why he is doing it, and what he should do."

Likewise, all of us experience times when the behavior of a child is so surprising, so unusual, so troublesome that we can think of no reasonable psychological explanation, and so we manage the child in a manner that fails to guide him toward any desirable conduct. We face a problem. We experiment with various schemes to solve it, and yet our efforts seem to aggravate the situation.

While Dr. Beverly does not offer a formula to solve every problem, his picture of normal childhood, the many fascinating illustrations out of his wealth of experience, and the accumulated data from his observations of normal childhood reactions will go a long ways toward giving every one a better understanding of why children behave as they do. He presents principles for mental health, and describes situations with such dramatic interest that you will read and follow his reasoning in spite of its untraditional approach to the child—adult relationship.

For the school health worker who must perforce advise parents and teachers, this study of children will give essential help in interpreting some of the most confusing reactions of children as as well as the basic characteristics of growth and development.

Harold H. Mitchell, M.D.

EDITORIAL STAFF

CHARLES H. KEENE, M.D., *Editor*

EARL E. KLEINSCHMIDT, M.D., *Assistant Editor*

EDITORIAL BOARD

GERTRUDE E. CROMWELL, R.N.
Supervisor, Health and Nursing
Des Moines, Iowa

C. MORLEY SELLERY, M.D.
Director, Health Service
Section, Public Schools
Los Angeles, Calif.

S. B. MCPHEETERS, M.D.
Director, Public Health
Wayne County Health Dept.
Goldsboro, N. C.

CLAIR E. TURNER, DR. P.H.
Professor of Biology and
Public Health
Mass. Institute of Technology
Cambridge, Mass.

FREDERICK L. PATRY, M.D.
Psychiatrist
Formerly State Dept. of Education
Albany, N. Y.

GEORGE M. WHEATLEY, M.D.
Pediatrist, Asst. Medical Director
Metropolitan Life Insurance Co.,
New York City

EDITORIALS

Below is a copied editorial which seems to your editor so well to fit the present needs in our schools—and in our American way of life—that it should be reproduced as the Editorial-of-the-month.

The writer of the editorial, C. H. McCloy, is Director of the Division of Physical Education at the State University of Iowa, and Research Professor of Anthropometry and Physical Education. He has spent his life in teaching and *participating in* various types of physical-education activities. While his special field has been research in physical education, and he is author of two excellent texts and numerous articles in this field, he is himself an expert gymnast. He is a Past President of the Central District Association of the American Association for Health, Physical Education, and Recreation.

* * * * *

Just How Big IS Our Task?—In recent years, there has been a growing tendency for many of our leading philosophers of physical education to become increasingly ambitious, so far as the aims, the objectives, and the scope of physical education are concerned. According to these writers, the objectives of physical education are as inclusive as those of all education: through physical education must come the integration of the whole personality; physical educators must be the major leaders in the march to an improved social citizenship, and they must be *all* things to all mankind. These physical educators look with a sort of fascinated horror upon those

among us who would with purposeful aforethought promote good health as such; teach expert techniques for the back stroke; permit a group of interested students to form a gymnastics club to practice apparatus work; or aid a group of college boys to organize a weight-lifters' club.

As we study this literature, we have a growing conviction, first that we are spreading too far—and much too thin. We all believe in the need for education for democratic citizenship: but does *every* branch of education, *every* educational group have to assume almost the sole responsibility for it? In the public schools, physical educators usually have the average child not more than three to five hours a week—including bathing and dressing. These same children are probably in contact with other teachers in the school twenty hours a week. Do we not trust these other teachers? Do not they, also, promote the development of the democratic processes? Do not they teach the child to think for himself? May we not have some *specific* objectives that deal with health, with physical condition, with motor skills, and with the culture of physical education itself, without being damned as being merely old-fashioned physical trainers?

Our second conviction is either that many of these philosophers of physical education have had little experience with varsity sports and with what they speak of as "individual" activities, or that they are growing old. Many of us who trained with varsity teams, which were taught and "dominated" by the coach, look back upon that training as perhaps our richest bit of educational experience. The squad—coach and all—was a group in the best educational sense of the word. All of the members contributed some ideas, all of them thought their own thoughts, and almost all enjoyed the fellowship of a like-minded group. It was not just the signal practice and the scrimmages—there were the trips, the locker-room, the "bull sessions," the "skull practices," and the planning how each could improve his particular task. They *disciplined* themselves to become really expert at something for the common good—something that we see all too little of in our self-styled "modern" schools today.

Those who decry groups for the practice of gymnastics have probably never experienced the "clubiness" and the social give-and-take, the mutual constructive aid and criticism of a group of gymnasts, in a college gym team, in a Turnverein, or in a gymnastics club in a Y.M.C.A. These groups probably have more group-sharing in their individual and group interests than do most sports teams.

It would probably come as a shock to these viewers-with-alarm

to learn that the "weight-lifters' clubs" are, first of all, *clubs*. There, men—and sometimes women—gather to associate in social and in competitive *activity*. They simply happen to like this kind of activity. If it is real fun for them, why should they have to know "to what purpose the acquired strength is to be put?" If we had applied this criterion before we applied ourselves to any learnings, how many of us would have learned *anything?* A dozen evenings spent with the better clubs of such groups reveals the practice of a very large number of the social virtues that we say we seek.

The writer is in complete agreement with these philosophers concerning the need for developing the spirit and the practice of social democracy. He believes profoundly in the need for an integrated personality, and thinks that we should start with ourselves. But he is not convinced that physical education must shoulder the whole burden, or that physical education teachers are the only potential saviors of democracy or integrators of whole souls. He believes that we can trust many kinds of interest groups—those interested in "individual" activities, as well as those interested in purely team or group activities—to work out democratic techniques of constructive group experience, and that it is no social sin to be interested in the development of one's skills or of one's strength or of one's health—to the end that we feel supremely well and function joyously and effectively.

If we would concentrate on doing a good job of organizing and of presenting the activity programs peculiar to our own field of education—both as to skills and to group practice—and not try to assume the major responsibility for all aspects of the education of the individual, we would increase our service to the individual being educated, become expert in doing our jobs effectively, and grow in the respect we receive from our educational colleagues of other disciplines, who when they divide our output by our wordy claims all too frequently find the resultant quotient very small indeed.—By C. H. McCloy, State University of Iowa, The Journal of Health and Physical Education, December, 1941, Vol. XII, No. 10, p. 568-p. 569.

* * * * *

Chest Examinations, — Minneapolis junior and senior high school students will have free X-ray chest examinations for tuberculosis, sponsored by the Hennepin County Tuberculosis Association, Minneapolis members of the Minnesota Radiological Society and the Hennepin County Medical Society. These are available to parochial schools and schools in rural Hennepin county. The Journal Lancet, Vol. LXI, No. 11, November, 1941, p. 469.

ABSTRACTS

School Nursing in an Industrial Community. — The school health program in Pittsburg, California, (pop. 9520) is aimed toward integration and correlation with the general school curriculum, while teachers and school health personnel assume jointly the responsibilities which otherwise would be carried by a health coordinator. The school health personnel conduct and measure their activities in terms of the educational philosophy practiced by the teaching group.

The school population of 2,000 is divided into four groups and is housed in the primary and intermediate schools and junior and senior high schools. Matters pertaining to health are cared for by a staff employed directly by the school board. It consists of two full-time public health nurses, a dental hygienist and a secretary, each serving half-time, and a physician whose services are used as needed. The senior nurse is responsible for the administration of the program and in turn is directly responsible to the superintendent of schools.

The basic curriculum of the school system is the motivating instrument of its activities. Each time there has been a revision of content, the health personnel have been represented on the committee for health and safety education. More direct is the personal assistance which members of the staff give to individual teachers.

The health service aims to meet the needs of the school and community through its program for the control of communicable disease, including tuberculosis; its setup for the supervision of individual health which includes observations of physician, nurse, dental hygienist, and teacher; the dental program; the field work which includes the follow-up and supervision of children with special problems; and the nurse's daily conference periods for the administration of first aid and the supervision of acute conditions.

Private physicians are often interviewed concerning illness trends, and not infrequently our measures for preventive work have been influenced by their suggestions. All this provides for a unified approach to any acute situation which may arise in the community and for a common understanding of procedures to be followed by all agencies, both public and private.

Much has been said about the educational value of the health examination made in schools, both as to its contribution to the child's personal experiences and the bringing about of changes in habits and the securing of treatment. Careful preparation through

classroom discussion and an appointment system whereby the parents in the elementary schools are invited to be present makes the experience satisfactory and pleasant for both pupil and parent.

In the junior and senior high schools, appointments are given directly to the students. Parents may be present if they wish. During the examination the student is free to ask questions. This is followed by an individual conference in which the findings of the physicians are explained and personal habits and problems discussed.

A few years ago when we evaluated the activities of our health program we found that we were missing one of the best opportunities for health guidance. As a result of this evaluation a policy was established of reviewing with each graduating senior his cumulative health record. Highlights of the record are interpreted in their relationship to occupational or professional choices and future plans. Where there is need for periodic checking or follow-up, the problem is thoroughly discussed.

Education in dental health is the chief objective of the dental program, which is divided into two services. The annual dental examination in the elementary grades is accompanied by special classroom projects and other activities. Parents are invited to visit the school, and there the hygienist discusses with them any problem relating to the dental welfare of their children. In the high schools, at the time of examination, the individual conference is again the chief means of supplementing the knowledge gained through the basic curriculum. Frequently these media of education are augmented by a special film or speakers at assemblies. The second service of the dental program stresses oral hygiene and gives every child at least twice during his elementary school life the privilege of having his teeth cleaned by the dental hygienist.

Probably one of the most far-reaching methods for spreading health information is the press. During recent years, this phase of the health program has grown under the guidance of the public relations director of the school district. Official news as well as timely editorials regarding objectives, policies, or activities are in this way presented to the public in an interesting manner through the local and school publications. A weekly column, which is written from the viewpoint of an outsider who visits classrooms and talks chattily of what is going on, is published in a local daily paper.

A second feature of public schools week is open-house evening, which affords opportunities for demonstration and exhibit work. Featured this year is the audiometer, around which parents and

friends gathered to see and listen, and receive literature on ears and hearing. Posters and a map giving graphic pictures of the immunization status and communicable disease conditions of the community were displayed. Equipment used in the teaching of home nursing classes held the attention of many. Of these the most popular was the life-size torso.

Efforts toward better health information for teachers may be considered a phase of adult education. To meet this need, conferences and special teachers' meetings have been held with speakers who are specialists in their respective fields. "School Nursing in An Industrial Community," by Olivia Hunsinger, R.N., Public Health Nursing, November, 1941. Abstracted by Gertrude E. Cromwell, Supervisor of Health Education and School Nursing, Des Moines Public Schools.

* * * * *

THE NURSE IN THE SCHOOL HEALTH PROGRAM

By the National Organization for Public Health Nursing, 1790 Broadway, New York City, October 1941.

Our National Organization for Public Health Nursing has seen fit to produce an eleven-page pamphlet discussing the nursing problems in public schools. I would think that the organization would make a distinct contribution if they made every effort to get this pamphlet into the hands of physicians in charge of school health programs, and, more important, into the hands of local superintendents of schools.

The first three pages, devoted to what the school nurse does or should do, would be a distinct contribution if every superintendent understood the nurse's duties. The enumeration of activities is excellent. It is brief and concise.

In one or two places the reviewer disagrees with her National Organization, but that would be expected in any preparation. Pupil load for efficient health education, as stated at 1,500 of the elementary school age and 2,000 to 2,500 of the secondary school group, would seem to be too high if the nurse is expected to do all she can for the health education of all people—children, teachers, and parents. It would seem that one of the places where our National Organization might assist is in promoting more effective services by reduced pupil loads.

It is well that the organization has listed sources of securing adequately prepared nurses. Many school administrators do not yet know about the Nurse Placement Service, nor do they seem to be aware that the state health departments could direct them toward securing better nurses who have adequate training for school nursing. Gertrude E. Cromwell, R.N.